

Message Text

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R 171400Z DEC 75

FM USMISSION IAEA VIENNA

TO CARL A. BENNETT, BATTELLE-NORTHWEST, 4000 N.E.

41ST STREET, SEATTLE, WASHINGTON 98105(TELEX NO. 326 345)

INFO SECSTATE WASHDC 6834

USERDA GERMANTOWN

UNCLAS IAEA VIENNA 10493

DEPT PASS ACDA

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SUBJECT: IMAI SUMMARY OF SAGSI MEETING

REF: BENNETT/MAHY TWX 151730Z DEC 75

FOLLOWING IS IMAI SUMMARY SAGSI, REQUESTED REFTWX:

QUOTE

1. THE MOST IMPORTANT POINT BROUGHT OUT DURING THE DISCUSSION WAS ABOUT "SIGNIFICANT AMOUNT." IT STARTED OUT BY THE QUESTION POSED BY I.G. REGARDING SIGNIFICANT AMOUNT FOR LOW ENRICHED MATERIAL. THE BACKGROUNDS FOR THE QUESTION AS THE GROUP UNDERSTOOD IT WERE:
(A) INCREASING THROUGHPUT, IF SAME MEASUREMENT ACCURACY IS SUPPLIED, WILL RESULT IN EVER INCREASING SIGNIFICANT AMOUNT.

(B) PRACTICAL DIFFICULTIES OF IMPROVING ACCURACY IN VIEW OF FABRICATION PLANT PRACTICE, AND OF ASSAYING OF COMPLETED FUEL ASSEMBLY.

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2. THE ISSUE LED TO THE DISCUSSION OF THE FOLLOWING:

(A) WHAT, IN VIEW OF THE SAFEGUARDS "OBJECTIVE," IS THE MEANING OF SIGNIFICANT AMOUNT FOR LOW ENRICHED MATERIAL,
(B) IS IT REALLY COST/EFFECTIVE TO ATTEMPT TO FURTHER REFINE ACCURACY OF MEASUREMENT TECHNIQUE REGARDING LOW ENRICHED MATERIAL IN LWR FUEL ASSEMBLIES.

3. THIS, IN TURN, BROUGHT OUT A FAIRLY FUNDAMENTAL ISSUE IN SAFEGUARDS TECHNOLOGY. IT WAS RECOGNIZED THAT DURING THE PROCESS OF FORMULATING THE CURRENT SET OF ASSUMPTIONS AND CONVENTIONS, THERE HAVE BEEN NUMBER OF COMPROMISES MADE BETWEEN THEORY AND PRACTICE. IN VIEW OF THE INCREASING VOLUME OF THROUGHPUT IT MIGHT BE WORTHWHILE TO RE-EXAMINE SUCH BASIC ASSUMPTIONS THEMSELVES.

IT WAS PROPOSED THAT:

(A) WE SHOULD TRY TO IDENTIFY A SET OF FACTORS GOVERNING SIGNIFICANT QUANTITIES, AND IDENTIFY WHAT ASSUMPTIONS ARE BEING ADOPTED TODAY. THEN IT WILL BE POSSIBLE TO ANALYZE EFFECT OF CHANGES IN ASSUMPTIONS. THESE INCLUDE SUCH ITEMS AS:

(I) WHETHER CLANDESTINE FACILITIES EXIST,
(II) WHETHER CLANDESTINE MATERIAL SHOULD BE CONSIDERED,
(III) THE EXTENT OF COST/EFFECTIVENESS STRATEGY BY DIVERTER,
(IV) AND SEVERAL OTHER FACTORS AS DELINEATED IN MR. GUPTA'S PAPER;

(B) IT WOULD BE USEFUL TO RECONSTRUCT THE CURRENT LOGIC OF SAFEGUARDS TECHNOLOGY ACCORDING TO SUCH A SET OF FACTORS AND ASSUMPTIONS IN SYSTEMS ANALYSIS FASHION, AND ALSO, IF POSSIBLE, TO COMBINE THEM WITH METHODOLOGY OF RISK ANALYSIS. IT WAS FELT THAT SUCH AN EXERCISE WOULD SERVE AS IMPORTANT STARTING POINT FOR SIGNIFICANT QUANTITY DISCUSSION,

(C) THE PROBLEM WAS UNDERSTOOD AS THAT OF

(I) MUG (SUBSTANTIVE SIGNIFICANCE)
(II) MUF (STATISTICAL SIGNIFICANCE)

4. IT WAS UNIVERSALLY AGREED THAT MAJOR POINT OF UNCLASSIFIED

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SAFEGUARD EXERCISE RESTS IN QUANTIFICATION. IT WAS BROUGHT OUT THAT MATERIAL ACCOUNTANCY OR MUF ANALYSIS AS CURRENTLY CONCEIVED MAY NOT BE THE ONLY WAY FOR ACHIEVING NECESSARY QUANTIFICATION. THE METHOD OF SUCH QUANTIFICATION NEEDS BE ASSESSED IN VIEW OF THE PRECISE DEFINITION OF THE SAFEGUARDS OBJECTIVES.

(A) SIGNIFICANT AMOUNT MAY DIFFER ACCORDING TO SHAPE,

FORM AND NATURE OF THE MATERIAL AS WELL AS THOSE OF THE FACILITIES IN QUESTION,
(B) IT WILL BE STRONGLY INFLUENCED BY THE ENVIRONMENT SUCH AS, IF THERE IS A DECLARED OR CLANDESTINE ENRICHMENT PLANT,
(C) SINCE VARIANCE OF MUF IS STRONGLY GOVERNED BY VARIANCE OF THROUGHPUT, IT MAY BE POSSIBLE TO SIMPLIFY THE PROBLEM BY SUBSTITUTING IT WITH SUCH THINGS AS:
(I) CONTAINMENT AND SURVEILLANCE MEASURES
(II) INPUT/OUTPUT ANALYSIS BASED ON ON-LINE REAL-TIME REPORTING SYSTEM, OR
(III) ANY OTHER ALTERNATIVE MEANS THAT MAY PROPERLY SERVE SUCH PURPOSES.
(D) THE GROUP AGREED THAT A PANEL ON CONTAINMENT AND SURVEILLANCE TO BE CONVENED BY THE AGENCY MAY BE USEFUL, AND THAT INDIVIDUAL MEMBER OF THE GROUP MAY SUBMIT THE OUTCOME OF HIS OWN EXERCISE ON SYSTEMS ANALYSIS OF FACTORS AND ASSUMPTIONS THAT DETERMINE SIGNIFICANT QUANTITY. SUCH AN EXERCISE SHOULD LEAD TO:
(I) BETTER UNDERSTANDING OF THE SIGNIFICANT QUANTITY FOR ALL CASES, TO BE APPLIED TO DIFFERENT SAFEGUARD SITUATIONS,
(II) SUPPLEMENT THE SITUATION OF SOLE EMPHASIS BEING PLACED ON MATERIAL ACCOUNTACY BY INCREASED CONCERN ON OTHER INSTRUMENTS IN SAFEGUARDS TECHNOLOGY SUCH AS CONTAINMENT AND SURVEILLANCE.

5. IT WAS STRONGLY REALIZED THAT THERE ARE OTHER OUTSTANDING PROBLEMS OF SIGNIFICANT QUANTITY, REGARDING:
(A) ABSOLUTE VALUE VS. RATION OF THROUGHPUT,
(B) COMBINATION OF MORE THAN ONE MBA WHICH CONSTITUTE NATIONAL FUEL CYCLE.
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6. REGARDING REPORTING AND RECORDING, IT WAS EMPHASIZED THAT IF UNIFORM FORMULA FOR REDUCTION OF SOURCE DATA TO REPORTING DATA COULD BE WORKED OUT, IT WOULD GREATLY EASE THE TASK OF INSPECTORS AT THE FIELD. IN VIEW OF DIFFERENT STATUS OF DEVELOPMENT OF SUCH A SYSTEM AT DIFFERENT FACILITIES, IT WAS SUGGESTED THAT A PANEL MIGHT BE CONVENED IN ORDER THAT:
(A) PEOPLE WILL BE EXPOSED TO THE CURRENT STATUS OF DEVELOPMENT, AND
(B) THE AGENCY'S REQUIREMENT MAY BE MADE KNOWN TO VARIOUS STATES. END QUOTE.LABOWITZ

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